REMARKS

Applicant wishes to thank the Examiner for courtesies extended during the recent telephonic interview. The interview concerned discussion of the Office Action of March 3, 2005. In particular, the discussion concerned enablement of the claims with regard to predicting an immunoresponse to a disease. The Examiner's suggestions are believed to be incorporated into the current response.

With this amendment, claims 1 and 12-15 are the claims currently being examined. Claim 1 is the only claim which is in independent form. It is submitted that no new matter has been added to this application by way of this amendment.

Remarks Directed to "Priority"

The Examiner points out that there is no specific reference to earlier applications as required to claim the benefit of an earlier filing date under 35 U.S.C. §119. In order to comply with the requirement, Applicant has amended the specification to add the priority claim.

Remarks Directed to Rejection of Claims 7-8 under 35 U.S.C. §101

Claims 7-8 are rejected as improper process claims. The claims have been canceled making the rejection moot.

Remarks Directed to Rejection of Claims 1-8 under 35 U.S.C. §112, 1st Paragraph

Claims 1-8 stand rejected as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In particular, the Examiner states that the "claims are drawn to a single nucleotide polymorphism in the DNA encoding IL-10 -1.2 to -4.0 kb and that "a SNP at -3575, -2849, -2763 alone is insufficient to describe the genus." (Office Action, p. 4) The Examiner further

states that "the claims broadly encompass additional SNPs or genotypes which have not been disclosed." (Office Action, p. 10)

Applicant now amends claim 1 to include description of specific single nucleotide polymorphisms described in the specification as associated with high or low IL-10 production. Applicant submits that the amendments to claim 1 are supported in the present specification. In particular, the specification states that "... there was a significant over-representation in the frequency of the A allele at both -3575 ($p = 0.02$) and at -2763 ($p = 0.009$) when analyzed individually in low producers compared to high producers as shown in Table 5." (specification, p. 13, lines 11-14)

The Examiner additionally rejects claims 4-6 as not in compliance with the written description requirement under 35 U.S.C. §112, 1st paragraph because neither "the specification nor the claims provide any reference point for the positions or provide any sequence from which these positions are found." (Office Action, p. 5)

Applicant notes that claims 4-6 have been canceled and that the rejection is moot with regard to these claims. However, Applicant also notes that the specification describes not only the novel SNPs at -3575, -2849, and -2763 but further includes description of SNPs known in the art. In particular, the specification states that "... associations have been observed between the GCC haplotype of the three known SNPs (-1082G/A), -819C/T, -592C/A) and high IL-10 production and Ro antibody production. Kidney Int. 1999 56(1):281-8; Arthritis Rheum. 1998 41(6):1090-5." (specification, p. 2, line 21 – p. 3, line 2) In addition, the specification notes that "two dinucleotide microsatellites (IL1-0R, IL-10G) have been identified in the 4.0 kb 5[‘] untranslated region, and three Single Nucleotide Polymorphisms (SNPs) have been identified in the 1.3 kb 5[‘] UTR Cytokine 1995 7:1-7; and Immunogenetics 1997 46:120-128."

(specification, p. 2, lines 13-16) Further, the instant specification includes several references to publications which include IL-10 promoter sequences, specifically Eskdale et al., Immunogenetics (1997) 46:120-128 (specification, p. 2, line 16) and the Genbank sequence listings U16720 and X78437 (specification, p. 9, line 20) Applicant also notes that references cited in the Office Action refer to particular polymorphisms in the IL-10 promoter further showing that particular positions in the IL-10 promoter are known and their numbering is conventional and recognized by those of skill in the art. ["Keijsers teaches analyzing -1082, -819, -592" (Office Action, p. 7); "Tountas et al. ... teaches ethnic association of three polymorphisms in the IL-10 promoter ..." (Office Action, p. 7); "Koch et al. ... teaches a lack of association between polymorphisms of IL-10 ..."(Office Action, p. 8); "Ohashi et al. ... teaches a lack of association between interleukin-10 gene promoter polymorphism -1082G/A ..." (Office Action, p. 8); "Depboylu et al. ... teaches lack of association of interleukin-10 promoter region polymorphisms ..." (Office Action, p. 8); McGlinchey et al. ... teaches that in an Irish population, IL-10 -1082G/A was not found to be associated ..."(Office Action, p. 8); and "Tait et al. ... teaches polymorphisms of interleukin 10 gene are not associated ..."(Office Action, p. 8). Given the extensive documentation of the IL-10 promoter and known polymorphisms having defined numbered positions within the IL-10 promoter, Applicant suggests that one of skill in the art at the time of the invention should have been able to localize the novel SNPs of the invention by simply counting the number of nucleotides between a known SNP, such as -1082, -819 or -592, and a novel SNP of the invention, such as -3573, -2849 and -2763.

Thus, Applicant submits that although there is not a current rejection on this point affecting the claims, the claims comply the written description requirement under 35 U.S.C.

§112, 1st paragraph because the specification provides several reference points for the positions of the novel SNPs which may be useful in determining their location within the IL-10 promoter.

Thus, Applicant respectfully requests withdrawal of the instant rejection.

Remarks Directed to Rejection of Claims 1-8 under 35 U.S.C. §112, 2nd Paragraph

Claims 1-2 and 4-6 are rejected as indefinite because although the claims are drawn to a process for determining IL-10 promoter alleles, "the final step is one of genotyping DNA." (Office Action, p. 13, section 8A) Applicant has amended claim 1 to clarify that "said genotyping of said DNA result[s] in determination of IL-10 promoter alleles." It is submitted that the amended claim is not indefinite and it is requested that the rejection of independent claim 1 on this basis be withdrawn. Claims 2 and 4-6 have been canceled and it is therefore submitted that the rejection of these claims on this basis is moot.

Claim 3 stands rejected as indefinite but the claim has been canceled, rendering the rejection moot.

Claims 4-6 are rejected as indefinite "because '-3575,' for example, does not have any context. The claims do not indicate -3575 of what sequence. Numbering systems in the art vary and it is not clear what -3575 encompasses." (Office Action, p. 13, section 8C) Applicant notes that claims 4-6 have been canceled and submits that this rejection is therefore moot. However, Applicant refers to the above discussion of location of the novel SNPs -3575, -2849, and -2763 in the context of IL-10 promoter sequences known in the art at the time of filing, along with SNPs, such as -1082, -819, -592, known in the art at the time of filing. In view of such information, Applicant therefore suggests that the location of a nucleotide a specified distance upstream of a known identified SNP is not indefinite.

Claims 7-8 stand rejected as indefinite but the claims have been canceled, rendering the rejection moot.

Remarks Directed to Rejection of Claims 1-8 under 35 U.S.C. §102(b)

Claims 1, 2 and 4-6 stand rejected under 35 U.S.C. §102(b) as being anticipated by Eskdale et al. (Immunogenetics, vol. 46, pages 120-128, August 1997).

In order for the cited reference to have anticipated Applicant's invention, the reference must teach every element of the claim. (MPEP 2131)

Eskdale et al. is cited as teaching "... mapping the human IL-10 gene and further characterization of the 5' flanking sequence." (Office Action, p. 14, section 9) Eskdale is further cited as teaching "... sequencing 3-4 kb upstream of the transcription initiation site and identification of two new point mutations in the immediate promoter region." (Office Action, pp. 14-15, section 9) In addition, Eskdale is cited as teaching that "SNPs in the -1.2 to -4.0 inherently affect IL-10 production" and that "[t]herefore a method of sequencing these regions would inherently encompass a SNP which affects IL-10 production." (Office Action, p. 15, section 9)

Amended claim 1 describes a process of determining IL-10 promoter alleles specific to an individual human which includes genotyping DNA in an IL-10 promoter region for a single nucleotide polymorphism which affects IL-10 production, the single nucleotide polymorphism at a position selected from the group consisting of –3575 and –2763, wherein the DNA is obtained from the individual human and the genotyping of the DNA results in determination of IL-10 promoter alleles specific to the individual human. The claim further details that an A at position -3575 or -2763 is associated with low IL-10 production.

Applicant submits that Eskdale et al. does not teach every element of the current independent claim 1. In particular, Eskdale et al. does not appear to teach a single nucleotide polymorphism at position –3575 or –2763 of the IL-10 promoter, nor does Eskdale et al. appear to teach an association with presence of an A at position –3575 or –2763 and low IL-10 production. In contrast, the present specification states that "... there was a significant over-representation in the frequency of the A allele at both -3575 ($p = 0.02$) and at -2763 ($p = 0.009$) when analyzed individually in low producers compared to high producers as shown in Table 5." (specification, p. 13, lines 11-14)

Thus, it is submitted that the rejection of independent claim 1 under 35 U.S.C. §102(b) as being anticipated by Eskdale et al. is improper and Applicant respectfully requests that the rejection be withdrawn.

Claims 3, and 7-8 stand rejected under 35 U.S.C. §102(b) as being anticipated by Mok et al. As these claims have been canceled, Applicant believes the rejection to be moot.

Remarks Regarding New Claims

New claims 12-15 are hereby added and it is submitted that support for these claims is found in the specification. In particular, genotyping of the single nucleotide polymorphism at position –3575 and genotyping of the single nucleotide polymorphism at position –2763 as described in claim 12 is detailed in the specification, for example, on page 9, lines 4-14, inter alia.

Claim 13 incorporates the limitations of claim 1 and therefore details genotyping DNA in an IL-10 promoter region for a single nucleotide polymorphism at positions –3575, –2849, and -2763, thereby determining a haplotype at positions –3575, -2849 and –2763. This material is described in the specification, for example, on page 9, lines 4-14, inter alia.

Claims 14 details a process wherein the haplotype A[G/A]A is associated with low IL-10 levels production and claim 15 details a process wherein the haplotype TGC is associated with high IL-10 production. The specification supports these claims, for example, on page 11, lines 7-19, inter alia.

Summary

Claims 1 and 12-15 are pending in this application. Claims 2-8 have been canceled and claims 9-11 withdrawn due to a restriction requirement. New claims 12-15 have been added and it is submitted that no new matter has been added by way their addition or amendments to claim 1. Allowance of these claims and the passing of this application to issuance are solicited.

Respectfully submitted,

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